University of Otago
Open Access Publishing Survey Results

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Structure of this report

In late 2015 a survey was undertaken to assess University of Otago researchers' attitudes towards and practices in Open Access publishing. The findings are presented in this report as follows:

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The *Executive Summary* is for those readers who wish to focus on the chief findings of the investigation; recommendations follow that. *Key results* are presented in a bulleted list – providing more detail than the *Executive Summary* – followed by a brief summary of the global and national context for this study. The main section (*University of Otago OA Publishing Survey—Detailed report*) goes through each question in turn, providing tables, figures, calculations, cross-tabulations and so on.

Executive Summary

Researchers at the University of Otago are ambivalent about OA: in principle they strongly support open access to research literature but their behaviours are driven by the practicalities of cost and publication venue. More specifically:

- Otago researchers believe that *Research articles should be freely available to all*, in one of the clearest results in the survey, with 86% agreeing or strongly agreeing with this statement.
- Equally clearly, there was strong agreement that *Obtaining funding to publish OA is a barrier that prevents adoption*, with 84% agreeing/strongly agreeing.
- Respondents are heavily engaged in research publication activities, with 82% of respondents engaged in peer review and/or editorial activities for journals. This work occurs most often in non-OA settings but activity in the OA sphere is still common, with one-in-two conducting peer review for an OA journal and 18% doing editorial work.
- Almost half of respondents had published at least one Gold OA article in the two year-period covered by the survey. Those who published OA were motivated equally by principle ('belief' in OA, 47%) and practicality (46% simply choosing the best journal, which happened to be OA).
- Three-hundred and seventy-eight OA articles were published in the two-year period before the survey out of a total of 2386 articles of any kind (16%). Seventy-eight of the OA articles were published without cost. The remainder incurred fees totalling approximately NZ$500k for those two years, resulting in an average APC of $NZ1328 across all OA publishing, including those that were free. Respondents commonly obtained this funding from research accounts or departmental funds. A small number (6%) reported accessing special funds set up in their areas for publishing and a few (6%) paid from their own personal funds.
- Cost does affect publishing choices for some respondents, such as choosing to publish in a non-OA journal with a lower impact factor than an OA one. Several respondents raised the issue of unequal support to pay for APCs in different areas, even within a department.
- Respondents make heavy use of academic social networking sites for sharing their research. Awareness and use of the University of Otago institutional repository is low.
- Other forms of open access, including monograph publishing and data sharing, are not commonly practised.
- Respondents would like more support to make sense of this fast developing area, in terms of both funding and guidance. Cost and the need for a transparent, equitable mechanism through which to apply for funding were recurrent themes in the data and respondents' comments.

Recommendations

The following recommendations are intended to promote discussion about the findings across the organisation and what action may be taken.

Develop a co-ordinated approach to OA publishing across the organisation

- University staff in leadership positions (particularly Associate Deans (Research), Heads of Department, Directors of Research Centres, etc.) promote discussion and professional development around open access to foster a culture of awareness.
- Promote discussion of issues in University by distributing survey findings via executive summary and making the full report available to those interested.
- Undertake a stocktake of existing practices and processes concerning OA publishing.
- Consolidate existing information and education about OA and develop new training and development opportunities where gaps exist, e.g. guidelines to assist authors in choosing a publisher for OA, understanding authors' rights, and understanding of Green OA options.
- Advocate to funders and government for consideration of APC support as a real and increasing cost to universities.

Improve financial monitoring of OA costs and publishing costs in general

- Improve financial reporting on publication fees to clarify how much is being spent [already independently actioned by Financial Services Division].
- In due course, use improved financial tracking to evaluate cost/benefit of funding institutional memberships with major open access publishers to get discounts or waivers on APCs.

Develop policy/guidelines aligned with University strategy

- Consider policy statement on OA to affirm a commitment by the University, as appropriate, to the dissemination of its research and scholarship as widely as possible, as fundamental to the advancement of knowledge and in line with the strong support of staff for this principle.
- Develop guidelines to inform about OA and promote transparency:
    - Mechanisms to support APC payment in OA-only publications where publishing supports University goals for visibility of research and for PBRF.
    - Promote Green OA as the preferred method to enhance dissemination, visibility and community engagement with our research and scholarship, in line with the approach taken at other NZ universities.
    - Do not support payment of hybrid OA APCs, since Green (free) OA options exist and publisher practices have been shown to be poor.[1]

Key results

- Half of survey respondents were from the Division of Health Sciences; 26% were from Sciences and 18% from Humanities; Commerce was under-represented with 4%. In terms of PBRF disciplines, Health, Biological Sciences and Medicine/Public Health represented 58% of respondents. (Refer Q2 and Q3.)
- Respondents were reasonably spread in terms of the number of years involved in academic research, though those with 5-14 years of research experience represented the highest proportion (38%). (Q5)
- Respondents conduct a broad range of peer-review and editorial work for journals, with 82% of respondents undertaking peer review and/or editorial activities for journals. This work is done more often in non-OA settings but activity in the OA sphere is still common: three-quarters (75%) of all respondents carried out peer review for a conventionally published journal, while one-in-two (51%) did so for an OA journal; 26% provided editorial services to a conventionally-published journal, with 18% doing so for an OA one. (Q6)
- Most respondents were reasonably confident in their understanding of copyright and open access. (Q7)
- In the two years preceding the survey, 433 respondents had a combined publishing output of 2386 articles (though this calculation uses 11 as the number where respondents indicated 11 or more). (Q8)
- Almost exactly half of respondents had published at least one Gold OA article in the two year-period covered by the survey (184 had, 188 had not, a 49/51% split). Those who published OA were motivated equally by principle ('belief' in OA, 47%) and practicality (46% simply choosing the best journal, which happened to be OA). (Q9 and Q10)
- One quarter of those publishing at least one Gold OA article did not pay any APC for a total of 78 articles, most often because the journal did not charge them (e.g. the fee was waived). The other three-quarters of respondents who had published OA indicated a spend of approximately $500k in the two-year period covered by the survey, resulting in an average APC $NZ1328 across all OA publishing.
- As for how they paid, it was most common (57%) for research funds to be used; 26% used departmental funds; and 23% had the fee paid by a co-author from another institution. Only 13% of the respondents reported that their research funding included money specifically for paying open access publishing fees. A small number (6%) reported receiving institution-level funds to pay APCs, and the same number of respondents used their private funds. (Q11, Q12 and Q13)
- For those who had not published OA, the most common reason was that the best journal was not OA (56%); but a significant minority (29%) indicated that their choice of publication venue was determined by cost. (Q14)
- Respondents were far more likely to share their work via a commercial academic networking site than to use OUR Archive. Sixty-four percent of respondents use ResearchGate, Academia or similar sites. Green OA is not widely practised, with only 12% of respondents reporting actively having done so, though this figure likely does not include 'Green OA deposit on behalf' by a publisher or other party, which was reported by 32% of respondents. Awareness of the institutional repository was low, with 59% not

knowing about it. This was particularly true for staff in the Health Sciences. Humanities staff were much more likely to know about OUR Archive. (Q15 – 18).

- Data sharing is not common, with only 5% reporting having done so (Q18). This correlates to the relative lack of confidence respondents expressed about their understanding of OA data compared to other areas of OA, such as publishing and copyright (Q7).
- Very few respondents (8%) had engaged in forms of OA activity other than publishing articles. The creation of monographs and grey literature were the most common types of other open access activity. (Q19 and Q20)
- It is clear that Otago researchers believe that *Research articles should be freely available to all*, in one of the clearest results in the survey, a statement with which 86% agreed or strongly agreed; only 13 disagreed or strongly disagreed, with slightly more neutral (43, 11%).
- Equally clearly, there was strong agreement that *Obtaining funding to publish OA is a barrier that prevents adoption*, with 84% agreed or strongly agreed. Only 20 disagreed or strongly disagreed, with slightly more neutral (36, 11%).
- Respondents would like more support to make sense of this fast developing area, in terms of both funding and guidance. Cost and the need for a transparent, equitable mechanism through which to apply for funding were recurrent themes in the data and respondents' comments.

The full report follows, including a detailed breakdown of the data for each question.

University of Otago OA Publishing Survey – detailed report

The Open Access Context: globally and in New Zealand

Though its roots stretch back to the early 1990s, Open Access (OA) is now a fundamental part of the academic endeavour. This increased prominence has been fuelled by two main factors: technology that enabled the widespread dissemination of research outputs at significantly reduced cost, with a concomitant rise of a small group of mega-publishers that harnessed this technology and obtained the rights to what has been estimated to be as much as 50% of the world's research outputs;[2] and more recent counter-moves by governments (such as the UK and US governments and the European Union) and agencies that fund research (such as Wellcome, World Health Organisation, the Bill and Melinda Gates Foundation, as well as national bodies such as the National Health and Medical Research Council in Australia or the Tri-Agency Open Access Policy on Publications in Canada) to ensure that publicly-funded research is freely accessible to anyone who wants to use it, motivated by a belief that significant economic, social and cultural benefits are to be had by making high-value research outputs available without legal, financial or technical barriers. Approaches have differed in different contexts, with the UK and Europe pushing for Gold OA – where the formally published research output is openly available – and much of the rest of the world following the Green OA route, where the formal output may be toll-access but an alternative version is made available openly. In a slightly different context, four of the six members of the Matariki Network have an open access policy, as listed in Appendix A: List of open access policies at Matariki Network universities.

In New Zealand, the government made a *Declaration on Open & Transparent Government*[3] in 2012, a commitment to the active release of high-value public data "to enable the private and community sectors to use it to grow the economy, strengthen our social and cultural fabric, and sustain our environment [and] to encourage business and community involvement in government decision-making." Subsequent reviews of adoption of the declaration's principles among government agencies have "noted good progress and sought acceleration in public data release across the public service."[4] It has also adopted the *New Zealand Government and Open Access Licensing Framework* (NZGOAL), originally released in 2010 and now in its second iteration,[5] which has a broader application than the data-focused *Declaration* covering any copyright or non-copyright material created or owned by the government, in which:

> …is widely recognised, in New Zealand and abroad, that significant creative and economic potential may lie dormant in such material when locked up in agencies and not released on terms allowing re-use by others. That potential is two-fold:
>
> (a) individuals, non-profit and commercial organisations can leverage this material for creative, cultural and economic growth, improved environmental sustainability, greater productivity, and the wider public benefit; and
> (b) experts and others can contribute to improved policy development and more efficient financial performance by government through being able to access, manipulate and provide feedback on such material.

Version 1 of NZGOAL (2010) specifically excluded tertiary education institutions from its scope;[6] this was removed in Version 2, which references the education sector only in the form of an

'invitation' to school boards of trustees to take NZGOAL into account when releasing material to the public. Thus, in the New Zealand tertiary sector there is no specific guidance from government as to how OA may be approached. Essentially NZGOAL is a directive to the state sector that open licensing is to be applied to data, reports, research papers, web material and so on, as well as cultural works made available by state sector bodies such as the Museum of New Zealand Te Papa Tongarewa.

Neither have New Zealand's major funding agencies imposed any requirements on research projects funded by them to release research outputs or data under open licences.

Independently, some New Zealand universities have adopted OA policies and/or guidelines of their own following the Green OA pathway, in the absence of funding specifically targeted to enable gold OA.

- University of Auckland Open Access Guidelines,[7] which state the University's commitment to "making University-generated research outputs, ideas and knowledge freely available, without barriers to their reuse" – as well as the infrastructure to support this – and set out the expectation that staff and doctoral candidates make full-text versions of their research outputs available in their research repository.
- University of Waikato's Open Access Mandate,[8] committed to the concept of open access to knowledge through the deposit of full text, academic publications into the University's digital repository, the Research Commons, wherever possible.
- University of Canterbury mandatory deposit in the UC Research Repository.[9]
- Lincoln University Open Access Policy[10] – the most far-reaching of these policies – which sets out that the University "endorses making content openly and freely available as the first and preferred option," extending beyond research outputs to research data, teaching materials and public records.

Methodology

Within this broader context, the survey at the University of Otago sought to capture information about the level of awareness of and participation in OA publishing by University of Otago researchers. The instrument was based on similar surveys reported upon in the research literature from the library and information sciences community, along with surveys that had been designed and administered by journal publishers.[11] A draft of the survey was workshopped with a focus group of University of Otago senior academic staff before it was released.

An email invitation was sent at the end of October 2015 to all staff who had at least one item in the University's *MyResearch* research outputs and publications database and who were currently employed by the University, almost 3000 authors at that time. The link to the survey was also made available for invitees to send to new staff or other researchers with whom they were affiliated. Qualtrics software, for which the University has a licence, was used to gather responses.

The survey received responses from 474 individuals. Not all respondents answered every question. The discussion of the results indicates the number of respondents for each question.

Profile of Respondents

Question 1: Otago staff member or student?

All 474 respondents answered this question. The majority (91%) were University of Otago staff, and a very small proportion (3%) were students. Most of the "Other" respondents identifying themselves as Otago staff explained (in an accompanying comments field) that they either engaged in or supported research activities, but that this is not their primary role. Two "Other" respondents indicated they were not affiliated the University of Otago.

Q1: Which of the following applies to you?	**Responses**	**Percentage**
University of Otago staff member engaged in research	434	91%
University of Otago student engaged in research (choose the staff option if you're both a student and a staff member engaged in research.)	13	3%
Other [please indicate]	27	6%
Total	**474**	**100%**

Question 2: Primary PBRF research field

To identify respondents' primary field of research, the survey used the subject areas in which PBRF peer-review panels are organised.[12] Of the 465 respondents who answered this question, the largest group (22%) selected Biological Sciences as their primary area of research. The second largest research area was Medicine and Public Health (18%), followed very closely by Health (17%).[13]

The predominance of respondents from the biological and medical sciences resembles much larger recent surveys of academic authorship and open access.[14] Several factors may explain the high level of interest in open access journals amongst these researchers. Peer-reviewed journals play a major role in scholarly communication in their fields, and these researchers typically have a high journal article output over the course of their career.[15] In addition, there is the relatively early development of open access journals in the biomedical sciences and the large number of these journals that require authors to pay Article Processing Charges (APCs).[16]

Question 2: Please select the option that best represents your primary research field. (Source: PBRF Subject areas)	Responses	Percentage
Biological Sciences	101	22%
Medicine and Public Health	86	19%
Health	79	17%
Humanities and Law	46	10%
Physical Sciences	42	9%
Social Sciences and Other Cultural/Social Studies	37	8%
Education	26	6%
Mathematical and Information Sciences and Technology	18	4%
Business and Economics	9	2%
Engineering, Technology, and Architecture	8	2%
Creative and Performing Arts	6	1%
Maori Knowledge and Development	5	1%
Total	**463**	**100%**

Question 3: University of Otago Division

Respondents who had indicated being either a staff or student of the University were asked to indicate their primary division and department. The largest proportion (34%) of the 438 respondents to this question were from the Dunedin campus of the Health Sciences Division, with 51% of respondents being from Health Sciences Divisions as a whole. The Sciences and Humanities Divisions were reasonably well represented, with 26% and 18% respectively. See Appendix A for a breakdown of these 438 respondents by department.

Q3: What is your division & primary department?		Responses	Percentage
Commerce / School of Business		16	4%
Health Sciences (Christchurch)	33		
Health Sciences (Dunedin)	151	222	51%
Health Sciences (Wellington)	38		
Humanities		78	18%
Sciences		112	26%
Other		10	2%
Total	**222**	**438**	**100%**

Question 4: Ethnicity

In line with our responsibilities under the Treaty of Waitangi, respondents were provided with the opportunity to indicate the ethnic group with which they identify. A response was not required and respondents could choose more than one group. The source was the 2013 New Zealand census ethnicity question. 69% identified

Q4: Which ethic group do you belong to? (Source: NZ Census 2013)	Responses	Percentage
New Zealand European	324	69%
Māori	19	4%

Samoan	1	0%
Cook Island Māori	0	0%
Tongan	0	0%
Niuean	0	0%
Chinese	14	3%
Indian	6	1%
Other such as Dutch, Japanese, Tokelauan	104	22%
Total (more than one answer possible)	**468**	**100%**

Question 5: Years in academic research

This question sought to identify respondents' stage of career to identify in other questions whether this had any effect on their attitudes and behaviours. It should be noted that the time periods used were are of an unequal number of years (e.g. the first category spans five years, the second and third ten), which should be kept in mind when analysing any other data from the survey based on stage of career. The shorter time period for the 'early career' academics is reflected in the smaller number of responses in that category.

Q5: How many years have you been involved in academic research?	**Responses**	**Percentage**
Fewer than 5 years	56	12%
5-14 years	171	38%
15-24 years	120	27%
25 years or more	105	23%
Total	**452**	**100%**

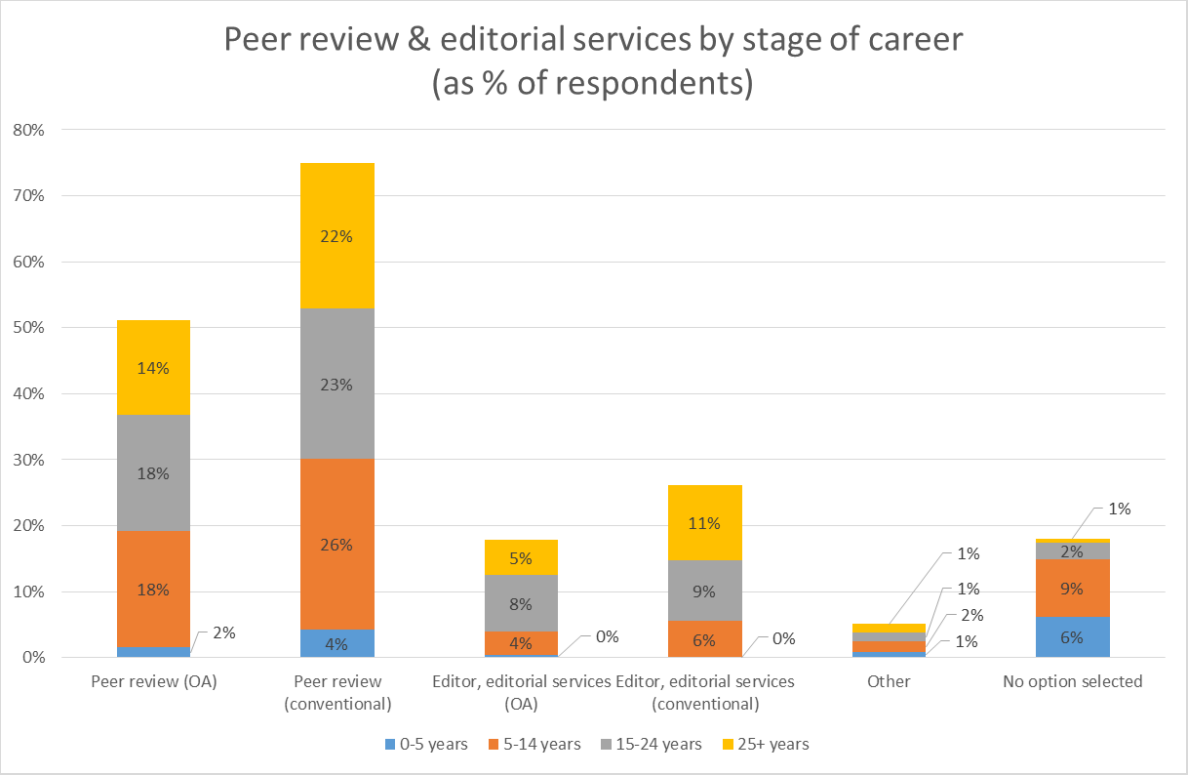
Publishing activity

Question 6: Provision of peer review and editorial services

Respondents were asked whether they provided peer review or editorial services – or some other service – for a journal or journals. 367 respondents indicated that they carry out one or more types of peer review, editorial or other services for a journal or journals, which equates to 82% of respondents to this question. Predictably, it was more common to be engaged in peer review than in editorial services; also, respondents were more likely to be involved with a conventional journal than an OA one. Seventy-five percent of all respondents carried out peer review for a conventionally published journal; one-in-two (51%) did so for an OA journal. Twenty-six percent provided editorial services to a conventionally-published journal, with 18% doing so for an OA one.

In terms of years in academic research – as shown in the graph below – few in the 0-5 year category were involved in these activities. In the other three categories, peer review activities were reasonably equally spread. Those in the two most experienced categories were more likely to do editorial work, with those in the 25+ bracket twice as likely to do this for a conventionally-published journal than for an OA one.

"Other" responses included elaborations on publishing activities, such as "I am part of the management team for a conventional journal that is transitioning to OA." Additional reported activities were providing editorial and peer services by invitation for special editions of journals, and peer-review of conference papers.



Question 7: Level of understanding regarding copyright and open access

Respondents reported their level of understanding regarding the following areas on a five-point scale from *no understanding* to *comprehensive understanding*:

- Open access publishing (articles)
- Open access publishing (data)
- Copyright as it relates to my own work
- Copyright as it relates to reusing the research outputs of others
- Creative Commons licensing

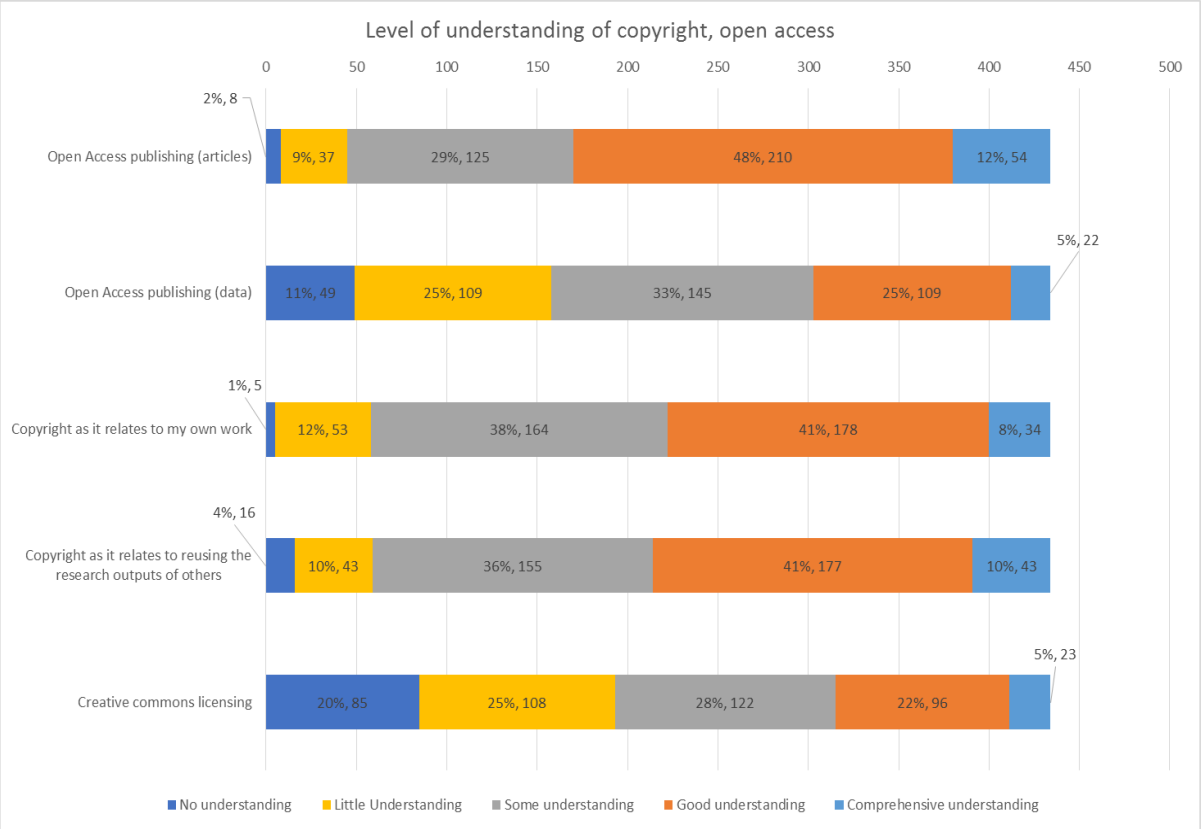
Most (77%) of the 436 respondents to this question indicated that they had some or good understanding of open access journal publishing, and a small group (12%) indicated they had comprehensive understanding. Only 11% felt they had little or no understanding.

Similarly, respondents largely reported having some or good understanding of copyright, related both to their own work and to the reuse of others' work (76%), with a slightly smaller group (8%) indicating comprehensive understanding. Copyright as it relates to reusing the work of others was less understood than copyright as it relates to one's own work.

Respondents were less confident about open access data. Fifty-eight percent reported either some or good understanding, and just 5% indicated comprehensive understanding. A considerable proportion (36%) reported having little or no understanding. This may be explained

by the fact that open sharing of research data is a more recent phenomenon in scholarly publishing. Researchers acknowledge that the complexities around open data make it an "intricate and difficult problem," and as a practice it is currently concentrated in a few fields.[17]

Respondents reported the least understanding of Creative Commons licensing. Creative Commons is the licensing system that has become the default for open access in scholarly publishing; it enables not only free access to research outputs but also free reuse of those works.[18] Just 50% of respondents indicated having some or good understanding, and only 5% reported a comprehensive level of understanding. Close to half (45%) of respondents indicated having little or no understanding. This suggests that University of Otago authors may not be aware of options for distributing their outputs more widely and reducing limitations on their sharing and reuse.



Question 8: Number of peer-reviewed articles published in past 2 years

There were 433 responses to this question, representing a combined publishing output of at least 2386 articles.[19] The highest proportion of respondents (19%) had published 11 or more peer-reviewed articles in the past 2 years. Clearly, the survey could have offered additional response choices to more accurately capture the volume of article publication. Researchers in the fields of Medicine & Public Health and Health chose "11 or more" as their most frequent response.

Where a respondent indicated that they had published no articles in the past two years, the survey ended. This was to ensure that responses of only actively-publishing researchers would be captured by subsequent questions, which pertained specifically to open access publishing activity.

Q8: Number of publications in the last two years	Responses	% of responses	# of publications	% of total publications
0	31	7%	0	0%
1	30	7%	30	1%
2	42	10%	84	4%
3	55	13%	165	7%
4	44	10%	176	7%
5	47	11%	235	10%
6	31	7%	186	8%
7	15	3%	105	4%
8	23	5%	184	8%
9	10	2%	90	4%
10	24	6%	240	10%
11 or more	81	19%	891*	37%
Total	**433**	**100%**	**2386**	**100%**

***** This calculation uses 11 for each response in the '11 or more' category.

Gold Open Access Publishing Activity

Question 9: Number of peer-reviewed articles published Gold open access in the past 2 years

This question was presented only to those respondents who had published at least one peer-reviewed article in the last two years. Gold OA was defined as follows:

> Gold Open Access is where the final, peer-reviewed version is published online by a journal immediately and free to access and reuse by any person. It is an alternative to the conventional model of scholarly publishing and means libraries or individuals do not need to pay a subscription or a fee to access the work.
>
> Gold OA sometimes involves a fee that is paid by the author(s) known as an Article Processing Charge (APC).
>
> For the next set of questions, think only about Gold forms of OA, as opposed to other forms of open access, such as self-archiving a pre-publication version of your work in an institutional repository.

Responses tallied almost equally between researchers who had published Gold OA articles in the past two years and those who had not.

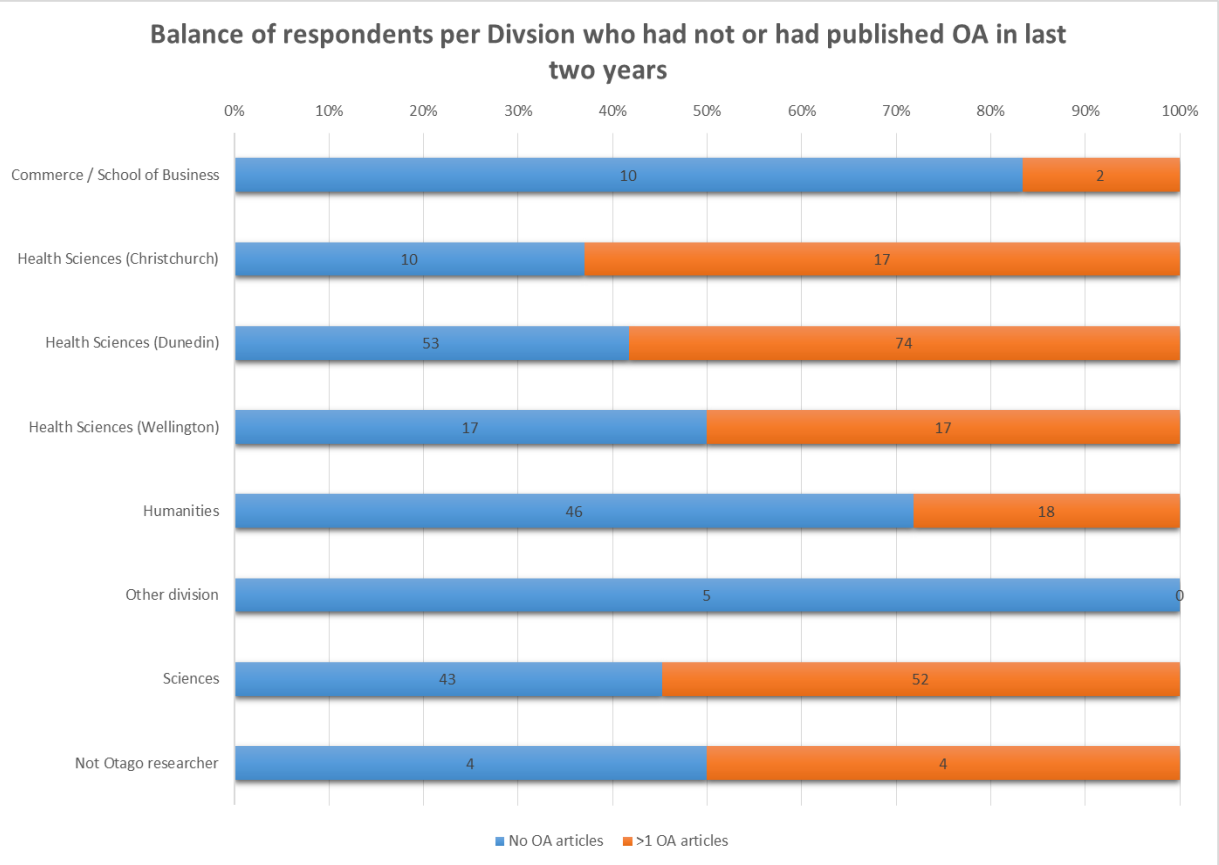
Respondents to this question could select either a number between 0 and 10, '11 or more' or 'I don't know.' Of the 399 respondents, 27 (6.7%) chose 'I don't know,' suggesting either that they did not know the publishing model of their journal(s), or that they did not know the precise number of open access publications amongst their recent output. Removing the 'I don't know' responses shows that 49% of respondents had published Gold OA articles in the past two years and 50% had not.

Q9: Number of Gold OA articles in the last two years	Responses	% of responses
0	188	50%

1	82	22%
2	41	11%
3	38	10%
4	12	3%
5	5	1%
6	1	0%
7	0	0%
8	0	0%
9	2	1%
10	0	0%
11 or more	3	1%
Total	**372***	**100%**

*Excludes 27 'I don't know' responses.

A breakdown of this Gold OA publishing activity by University division shows that researchers in the Health Sciences and the Sciences were the most active.



Question 10: Reasons for publishing open access

Authors who had published at least one Gold OA article within the previous two-year period were asked to explain why they had done so, by selecting one or more responses from a list.

Principle and practicality were equally strong drivers in researchers' choice. While many of the 182 respondents supported open access to academic research for its own sake (47% of

respondents indicated *I believe in open access to academic research*), there was a parallel emphasis on selecting the journal best suited for the research, regardless of its publishing model (46% indicated *The best journal for my research just happened to be open access*). The next most common reason was that *open access would help me reach my target audience*, with 40% selecting this option—another practical motivation.

The relative lack of influence by funders is notable, yet not surprising. The New Zealand government does not have a policy mandating open access to scholarly research, which the UK[20], the USA[21], and the European Commission[22] do; and New Zealand research funders do not require open access publication from researchers whom they award.[23] However, a small number of Otago researchers encountered Gold open access mandates from their own or their co-authors' funders—for example, the World Health Organisation (WHO).

The 36 respondents who selected 'Other' provided additional reasons, the most common being that the author or a co-author had been invited to publish in an open access journal. Others reported that the APC had been waived or reduced because they were editors for the journal or because they had a waiver from the publisher. Further reasons were the paper's having a better chance of acceptance, due to more basic submission quality standards, and the potential for increased citation.

Q10: You published open access because...	**% of respondents**	**Response count**
I believe in open access to academic research	47%	86
The best journal for my research just happened to be open access	46%	84
I believed open access publication would help me reach my target audience	40%	72
My co-author(s) prompted the decision to publish open access	31%	57
I believed my paper would be published more quickly	30%	54
Other--please specify:	20%	36
I was advised to publish open access by a colleague	5%	10
My co-author's research funder mandated open access publication	3%	6
My research funder mandated open access publication	2%	3
Open access publication was encouraged by my research funder	2%	3
Total (182 respondents with 411 selected responses)		**411**

Question 11: Total amount spent on open access Article Processing Charges (APCs)

Respondents who had published at least one Gold OA article were asked to indicate their approximate *total* expenditures on APCs over the preceding 2-year period. They were asked to select from ranges of expenditure rather than to provide specific amounts. Euros and US dollar figures were used, since APCs were most likely to have been paid in those currencies.[24]

Fully one-quarter (25%) of respondents spent nothing on APCs. For the 75% who paid, their total two-year expenditure was concentrated at the lower end of the ranges, with nearly half (47%) of respondents indicating that they had spent between €1-2500. Totalling the amounts shows that

between €275,000 and €336,000 was spent over the previous two-year period. Taking the mid-point of this range, it may be estimated that €306,000 was spent on APCs by University of Otago authors. At the time the survey was deployed, this amount converted to US$340,000/NZ$502,000.

It is difficult to accurately determine the costs of Gold OA publishing at the University. As this survey has shown, complexities involving articles' multiple authorship, variation between individuals' frequency of publication, a publisher's waiver or reduction of APCs, and an author's uncertainty about the open access status of a journal all play a part in obscuring its true cost. But there is no doubt that an estimated NZ$500,000 spent over a two-year period warrants attention, particularly regarding how researchers cover this cost.

Improved reporting on publication fees would help University and departmental administrators track the specific costs of publishing in open access journals. This could also assist researchers in budgeting for the costs of APCs based on previous expenditures. It is difficult to estimate an average APC, as open access publishing is a volatile sector; in addition, not all journals charge APCs and many offer variations on pricing.[25] Recent estimations of the average APC vary widely, from US$906[26] to £1682 (US$2245).[27]

Q11: Over this two-year period, indicate approximately the total amount spent on APCs	**% of responses**	**Response count**
Nothing	25%	43
€1 - €500 (US$550)	5%	8
€501 - €1000 (US$550 - $1100)	9%	16
€1001 - €1500 (US$1100 - $1650)	11%	19
€1501 - €2000 (US$1650 - $2200)	14%	23
€2001 - €2500 (US$2200 - $2760)	8%	14
€2501 - €3000 (US$2760 - $3300)	5%	9
€3001 - €3500 (US$3300 - $3860)	6%	10
€3501 - €4000 (US$3860 - $4400)	5%	8
€4001 - €4500 (US$4400 - $4960)	2%	4
€4501 - €5000 (US$4960 - $5500)	2%	3
€5001 - €5500 (US$5500 - $6070)	1%	1
€5501 - €6000 (US$6070 - $6620)	1%	2
€6001 - €6500 (US$6620 - $7170)	0%	0
€6501 - €7000 (US$7170 - $7725)	2%	4
€7001 - €7500 (US$7725 - $8275)	1%	2
€7501 - €8000 (US$8275 - $8825)	1%	1
€8001 - €8500 (US$8825 - $9380)	0%	0
€8501 - €9000 (US$9380 - $9930)	1%	2
€9001 - €9500 (US$9930 - $10480)	0%	0
€9501 - €10000 (US$10480 - $11000)	0%	0
More than €10000 (US$11000)	1%	1
I don't know	-	13

Total (183 total, excluding 'I don't know')	**100%**	**170**

In terms of the number of OA articles published, using data from Questions 8 and 9 it can be calculated that at least 378 articles were published OA by respondents out of the 2386 reported in total (16%). Seventy-eight of these were published without cost, based on the number of Gold OA articles reported in Question 9 by the 43 respondents who had not paid any APCs. The 127 respondents who did spend on APCs published at least 300 Gold OA articles. While there are some limitations to this data, free Gold OA publishing appears to be considerably less common than paid Gold OA, with the 78 articles that definitely did not incur an APC representing 21% of the 378 Gold OA articles.

Question 12: Reasons for no money being spent on APCs

The 43 respondents who did not pay APCs were asked to explain why, by selecting one or more responses from a list.

The most frequent response was that the journal did not charge these fees, followed by the journal having waived the fee. Reasons for waived fees provided in the accompanying comments box included the author having a voucher (such as those from the RSC Publishing *Gold for Gold* programme), the journal being in "start-up" phase, the author being invited to submit an article, the author also being an editor of the journal, and the author being a postgraduate student.

An analysis of Gold OA journals listed in the Directory of Open Access Journals (DOAJ) in 2014 suggested that 73% do not charge APCs.[28] However, the same analysis indicated that the majority of authors who chose Gold OA published in journals that do charge—27% of the journals requiring APCs contained 57% of the articles published. A more comprehensive 2016 study of Gold Open Access journals shows that levels of APC-charging journals vary between subject areas and are often associated with the size of the journal (i.e. number of articles published), the type of publisher (e.g. society, traditional, or fully open access), the size of the publisher, and the region of the world in which the journal was published.[29] These complexities make it difficult to anticipate what a typical open access expenditure might be for a University of Otago researcher.

Q12: You indicated no money spent on APCs. What was the reason for this? (Select all that apply.)	**% of respondents**	**Response count**
The journal does not charge article processing fees	48%	20
The journal waived the fee for my article	36%	15
Other reason--please specify:	29%	12
I don't know	5%	2
I have a membership with the publisher that covers these fees	0%	0
Total	**100%**	**42**

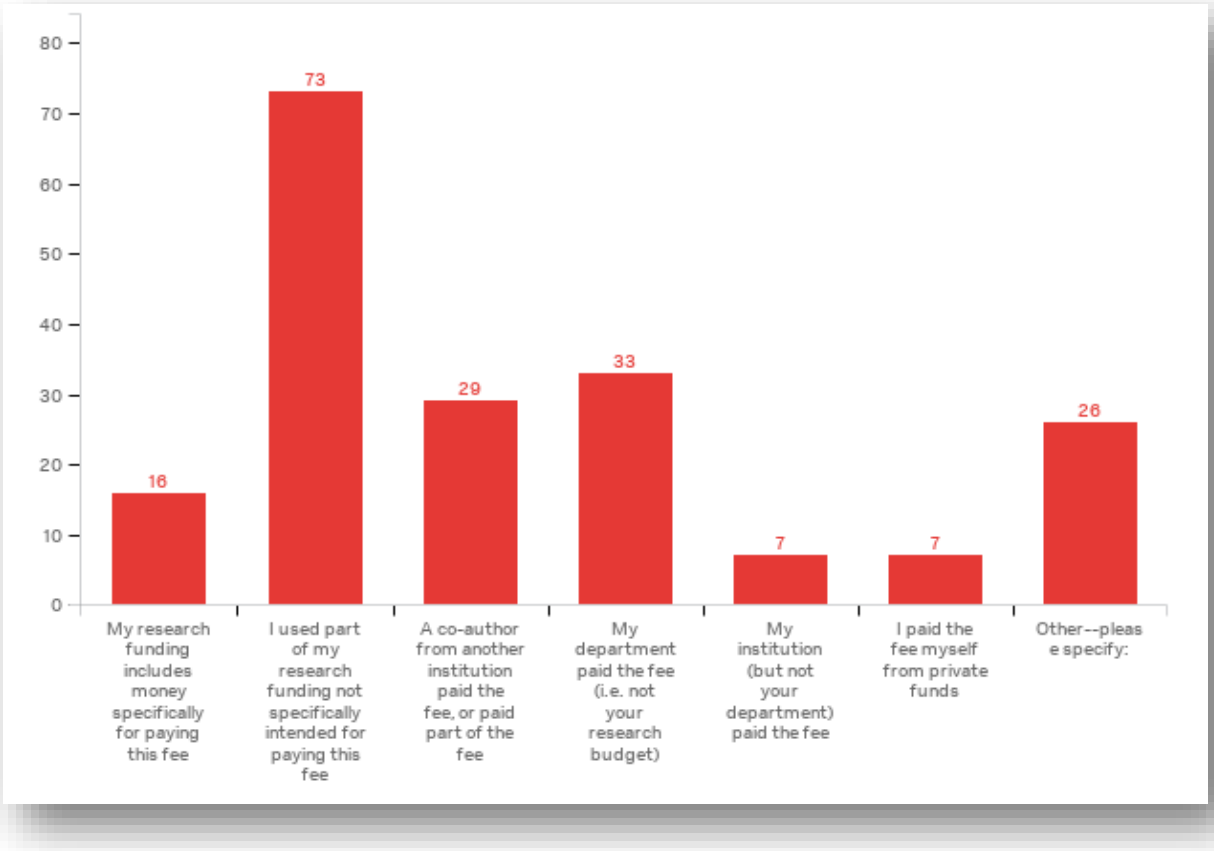
Question 13: How did you pay for APCs?

The 127 respondents who had paid APCs were asked how they covered that cost, again by selecting one or more responses from a list.

To pay APCs, most respondents (57%) indicated that they used general research funds; 26% used departmental funds; and 23% had the fee paid by a co-author from another institution. Only 13% of the respondents reported that their research funding included money specifically for paying open access publishing fees. A small number (6%) reported receiving institution-level funds to pay APCs, and the same number of respondents used their private funds.

Respondents selecting "Other" specified a variety of ways in which they paid APCs, such as by sharing costs within or among co-authors' departments, using their "research overheads" account, receiving funds from a departmental research committee, using leftover research funds, and using "PBRF funds that we receive specifically to allow further publishing." Some received APC discounts for their peer-reviewing and editorial activities or those of their co-author. One respondent reported receiving funding from a UK University library, and another reported getting support from "the body that funded my PhD research…but only after a good deal of negotiation."

Q13: How did you pay for APCs? (Select all that apply)	**% of responses**	**Response count**
I used part of my research funding not specifically intended for paying this fee	57%	73
My department paid the fee (i.e. not your research budget)	26%	33
A co-author from another institution paid the fee, or paid part of the fee	23%	29
Other--please specify:	20%	26
My research funding includes money specifically for paying this fee	13%	16
My institution (but not your department) paid the fee	6%	7
I paid the fee myself from private funds	6%	7
Total (127 respondents, 191 responses)	**100%**	**191**



Question 14: Reason for no open access publications in the past 2 years

This question was posed to respondents who had one or more publications in the last two years but indicated (Q9) that none of these was Gold OA.

Just over half of the respondents (56%) indicated that the journal they chose to publish in was not open access. Almost one-third indicated that they would have considered publishing open access but it was unaffordable. One-third indicated that they published in 'hybrid' journals and therefore had the option to make their accepted article open access by paying an APC, but chose not to.

The comments of the 33 respondents who indicated "Other" captured the main concerns that researchers have about open access publishing in general, so verbatim remarks are provided.

Most commented that cost was a factor. For example:

> I would have opted for OA in the Journal I published with but the fees were too high by orders of magnitude.
>
> Too expensive. I publish about 2-3 articles per year on open access and that's all I can afford.
>
> In my field many of the journals with the highest impact factor are open access so I would very much like to publish in them but the university won't pay for the article charges.

Several respondents (6) were explicitly against paying APCs:

> I would never publish in a journal that required me to pay a fee. I think that this is unethical. Top research outputs in my field are a few journals but largely monographs and book chapters. None of these require authors to pay fees and in the case of monographs often we earn royalities [sic].

> I resent very strongly that a change that was intended to reduce the massive profits publishers are making from the public purse is now a charge on authors and has not reduced the profits of these businesses.

> I don't agree with the practices of many of these journals. 'Pay to publish' degrades science I believe.

Further comments reflected concerns about quality of open access journals (5) and a belief that traditional publications are better (3):

> Don't trust their peer review process. When you pay up front, they are in to the game to make money from you and peer review may be dodgy.

> 'Gold' open access journals have (justifiably) gained a reputation of being low quality. I seek to publish in recognized high-quality journals.

> We prefer to publish in the longer established top journals.

One additional response reflected concerns about larger issues at play in scholarly publishing:

> I'm undecided on whether I should pay for my work to be published. I support OA, in principle I do not support publishers profiting from the products of publicly funded bodies. There are inappropriate drivers to publications for academics and these undermine the academic mission.

Q14: You indicated that none of your research publications in the last two years were published Gold OA. What were the reasons for this? (Select all that apply. If none apply continue to the next question.)	**% of responses**	**Response count**
Simply because the journal(s) I published in were not open access ones.	56%	106
The journal(s) I published in offered the option of paid-open access (a 'hybrid' journal) but I did not pay the fee.	33%	62
I might have published in a different journal that offers open access but the fees are unaffordable.	29%	55
Other	18%	33
Total (188 respondents, 256 responses)	**136%**	**256**

Green Open Access Activity

The next part of the survey presented questions on Green Open Access (also referred to as self-archiving) and the use of open access repositories, described as the following:

> ***Green Open Access or Self-archiving***
>
> Some researchers archive versions of their research in online Open Access repositories, which are non-commercial databases or sites for hosting research materials. These versions are usually pre-prints (the version submitted for peer review) or post-prints (the accepted version after peer-

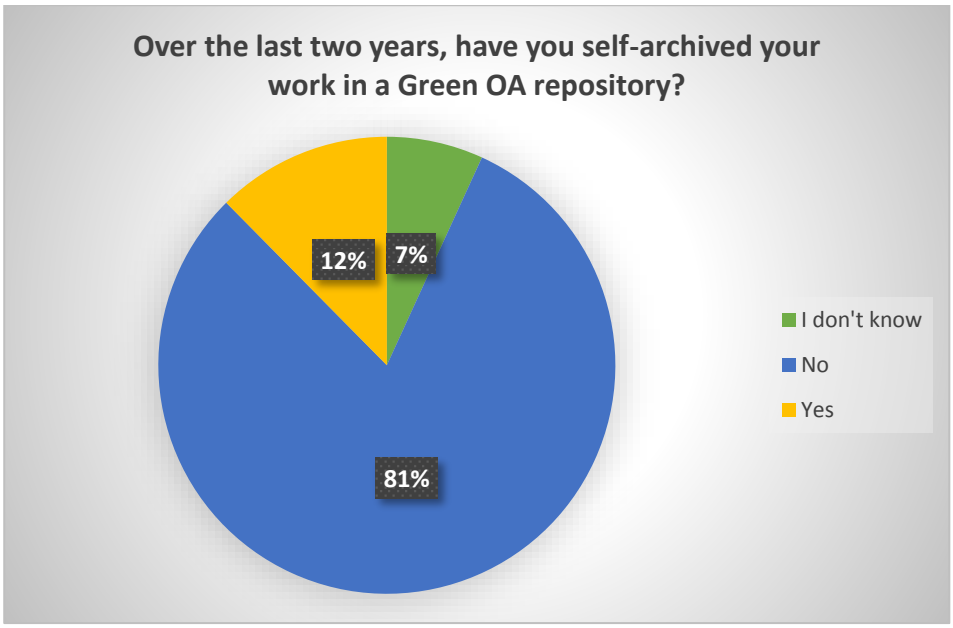
review but not the final publisher's version). Making publications available this way is referred to as author self-archiving or Green Open Access. Open Access repositories may be hosted by an institution (such as a university) or a discipline-based community of researchers. Journal publishers may allow authors to deposit the final version of an article in a repository or on a departmental website after a post-publication embargo period.

For the next set of questions, don't think about academic networking sites like ResearchGate or Academia.edu.

Question 15: Green OA activity

Respondents were asked whether they had self-archived any research outputs over the previous two years, the same time period that pertained to questions on Gold Open Access.

Of the 395 respondents to this question, 81% said they had not self-archived any of their work. Only 12% said they had and 7% did not know. The large percentage of researchers who had not made use of options for Green Open Access raises concerns—is it that researchers simply are not aware that they can make publications and other outputs open access without paying fees? Or are there other factors involved?

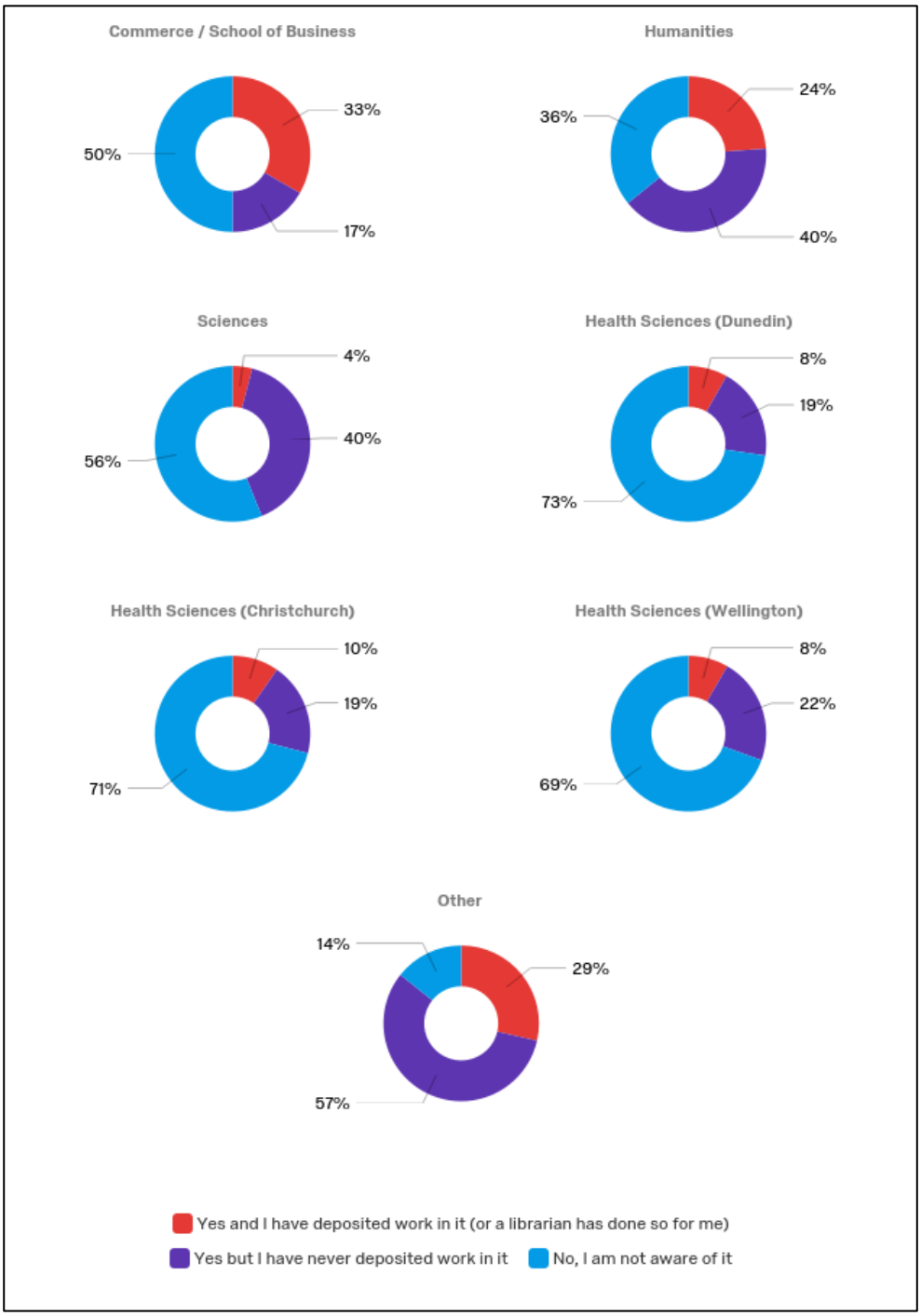


Questions 16 & 17: Awareness and use of OUR Archive

Respondents were asked (Q16) if they were aware of the University of Otago's institutional research repository, since this would be an option for making outputs available via Green Open Access.

Q16: Are you aware of the University of Otago's research repository, OUR Archive?	**% of responses**	**Response count**
Yes and I have deposited work in it (or a librarian has done so for me)	11%	45
Yes but I have never deposited work in it	29%	115
No, I am not aware of it	59%	235
Total (395 responses)	100%	395

Most (59%) of the 395 respondents to this question were not aware of OUR Archive. As shown in the following figure, Humanities staff had the highest level of awareness; and awareness was lower in each of the three Health Sciences campuses.



The 115 respondents who indicated they were aware of OUR Archive but had never used it were asked why (Q17).

'Other' received the highest number of responses (37%). This was closely followed by the options for 'I don't know how' (35%) and 'I don't see the need' (31%). The "Other" comments provided reflect these main themes with added detail, such as not being sure how to use it, feeling no need

to use it, and simply not having considered using it. Three respondents said they thought it was only for student theses.

Q17: Why have you never deposited work in OUR Archive? (Select all that apply.)	**% of responses**	**Response count**
Other	37%	43
I don't know how	35%	40
I don't see the need	31%	36
I choose to use another repository	15%	17
The process is too complicated	7%	8
Total (144 responses from 115 respondents)	**100%**	**115**

Question 18: Other ways of making work available

In contrast to their low use of options described above as Green OA or self-archiving (Q15 and Q16), most (64%) of the 318 respondents to this question made their research outputs available through commercial academic networking sites such as ResearchGate and Academia. The least frequent activity was the sharing of datasets.

There is a discrepancy between some of the results from this question and those from Question 15. Here, 41% of respondents indicated they had made use of well-known research repositories such as PubMed, arXiv or SSRN, either directly or indirectly (i.e. someone else acted on their behalf). This puts into question the high percentage of respondents (81%) to Q15 who reported no Green Open Access activity, because these same research repositories facilitate Green Open Access (as well as delayed open access, in the case of PubMed).

Respondents may have been confused about the terms “Green Open Access” and “self-archiving” and did not apply them to their own research behaviour. It is also possible that “repository” was construed to mean any place outside of a journal that one’s work may be made available. This, then, would mean not that researchers are unware of options for facilitating access to their work, but that they may not distinguish between the types of platforms for doing so.

Data sharing was only reported by 5% of respondents.

Comments provided in the ‘Other’ textbox indicated similar activities to the pre-defined responses with detail added, most commonly about sharing on personal and networking websites, and email.

Q18: In what other ways have you made your work available? (Select all that apply. If none apply continue to the next question.)	**% of respondents**	**Response count**
I put copies of or link to my work in commercial academic networking sites like ResearchGate or Academic.edu	64%	203
A publisher or other party has deposited work on my behalf into a repository (e.g. PubMed)	32%	101

I have posted copies of my work on a personal or departmental website (that is, copies in PDF, Word or other formats not links to formally published versions or citations)	27%	87
Other	9%	30
I have deposited a version in a discipline-based repository (e.g. PubMed Central, arXiv, SSRN)	9%	28
I share datasets related to my research outputs (e.g. on a site like Figshare or other data repository)	5%	17
Total (466 responses from 318 respondents)	**100%**	**318**

Other Open Access Publishing Activity

Question 19: Have you engaged in any other form of open access publishing?

Of the 396 respondents to this question, only 8% indicated they had engaged in forms of open access publishing other than journals.

Question 20: Please briefly describe (or link to) this other form of open access publishing.

The 30 respondents answering in the affirmative provided their own descriptions of these other forms. These free comments were coded to represent the theme of each, as shown in the table below. The creation of monographs and grey literature were the most common types of other open access activity. Somewhat confusingly, three respondents described this other form as research articles in open access journals. One of them added that no APC was paid, so perhaps these respondents are referring to open access articles that were free for them to publish.

Q20 coded: Other types of open access publishing activity	**Number of comments**
Open access monographs, including book chapters	9
Other 'grey' literature, such as technical or project reports, whitepapers, theses	7
Open access research articles	3
Freely accessible resources, not strictly openly licensed but on the open web, such as on own websites, catalogues or datasets	3
Open Educational Resources, textbooks and teaching models specifically designed and licensed for reuse and adaptation	4
Open source software	2
Research blogging, self-publishing	2
Total	**30**

General Researcher Attitudes to Open Access

The final part of the survey inquired about general beliefs and attitudes toward open access and, more particularly, open access in the local University context. Respondents were presented with two sets of statements and asked to indicate their level of agreement.

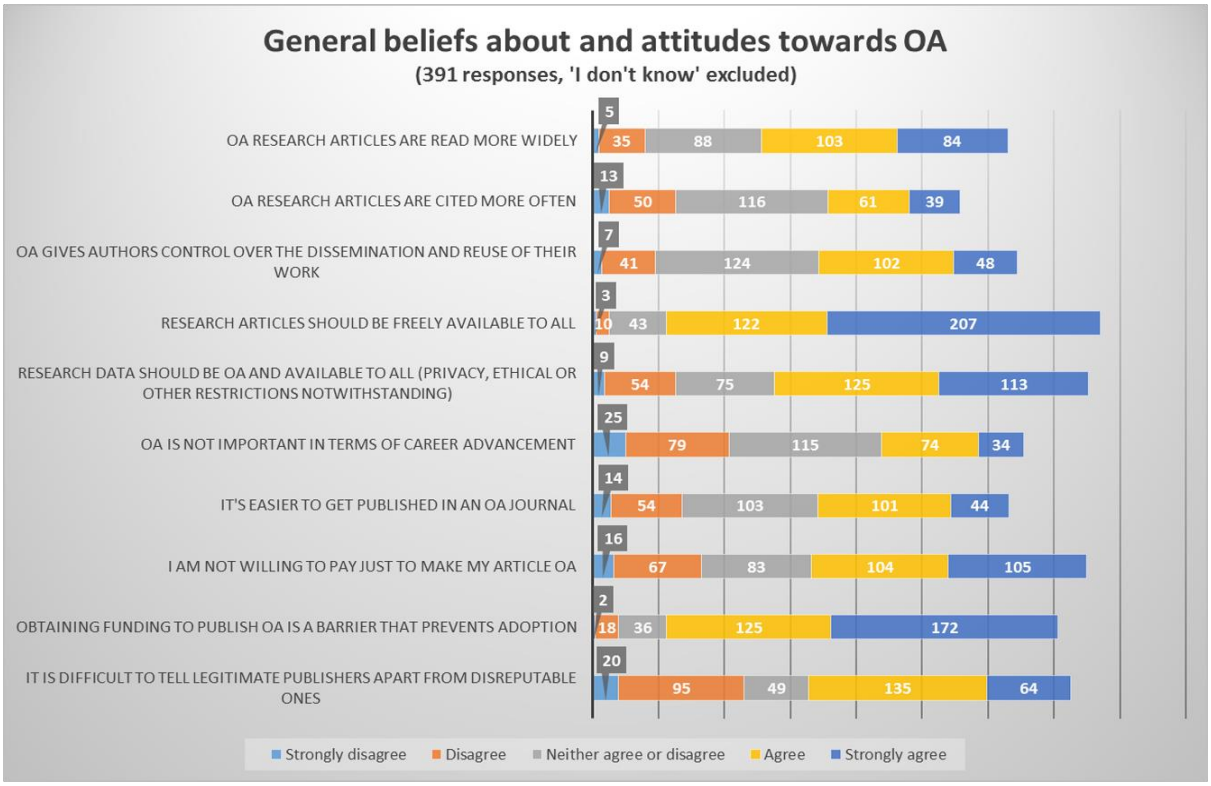
Question 21: Beliefs about and attitudes towards open access

The first set of 10 statements were about the benefits and challenges of open access publishing. Two results stand out: *Research articles should be freely available to all* and *Obtaining funding to publish OA is a barrier that prevents adoption* both received very strong levels of agreement, respectively with 86% and 84% agreeing or strongly agreeing with these statements. For neither of these statements was there a significant difference according to division. The strength of agreement again demonstrates the principle/practicality dichotomy.

Respondents also tended to agree that *Research data should be OA and available to all (privacy, ethical or other restrictions notwithstanding)* with 63% indicating agreement against 17% disagreement. This contrasts with the small number of respondents who reported actually sharing their data, indicative of a mismatch between principle and practice, as has been reported elsewhere.[30]

When it comes to the relationship between OA and readership and citations, the research literature provides a range of evidence as to the benefits, due to the variation of contexts in which studies have been conducted. In general, the consensus emerging is to demonstrate benefits certainly in in terms of readership and more often than not in terms of citation.[31] While respondents were more likely than not to agree that OA would result in work being read more often, they were less sure whether *OA articles are cited more often*, with a high number (116) neither agreeing nor disagreeing and another 112 choosing the *I don't know* option.

Respondents were the most divided over whether it is difficult to tell legitimate publishers apart from disreputable ones.



A table of the full data upon which the above graph is based is included in Appendix C.

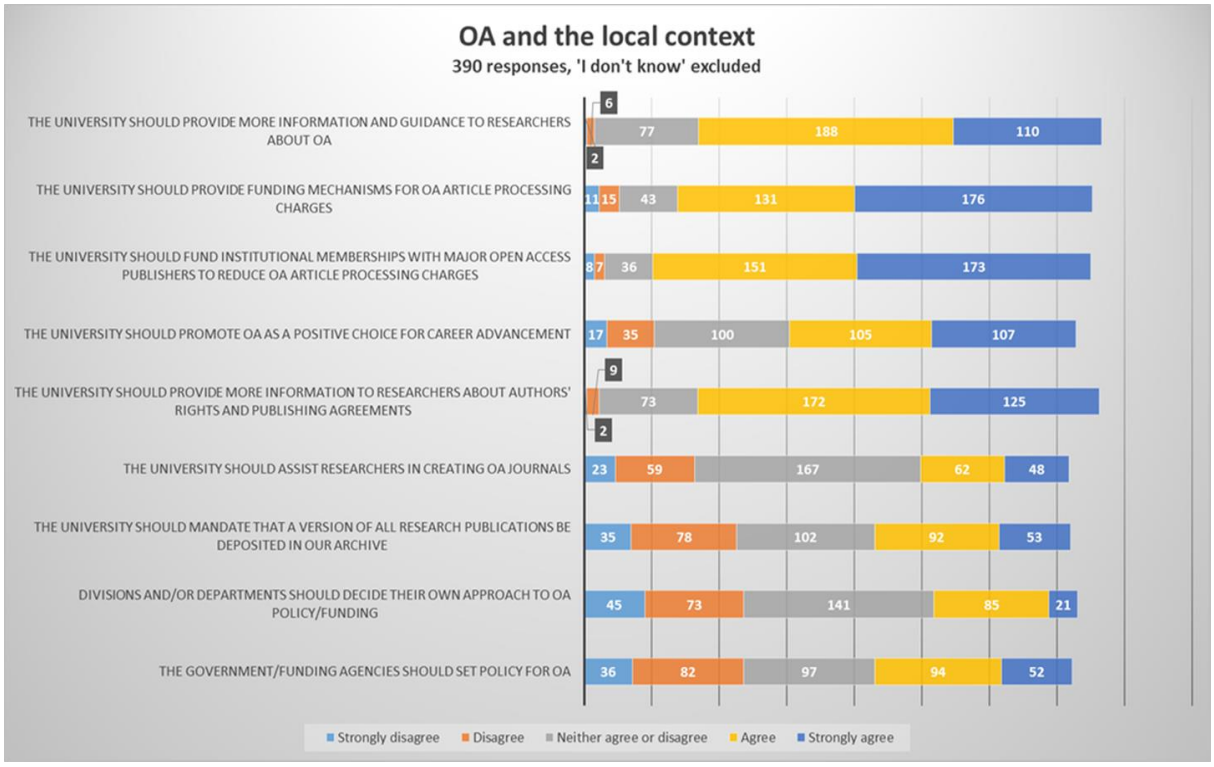
Question 22: Open access in the local context

The second set of statements focused on open access issues in the local University context.

Respondents clearly would like more support to make sense of this fast changing area, in terms of both funding and guidance. Statements regarding University funding received the strongest affirmation: there was a high level of agreement for the statement that *The University should provide funding mechanisms for open access article processing charges*. Respondents had the highest level of agreement that, as a practical mechanism to facilitate open access publishing, the University should fund institutional memberships with major open access publishers to reduce open access article processing charges.[32]

Most respondents also agreed that *the University should provide more information and guidance to researchers about OA* and *the University should provide more information to researchers about authors' rights and publishing agreements*.

In contrast, respondents had quite mixed opinions regarding policy, with large proportions neither agreeing nor disagreeing that the University should assist researchers in creating open access journals, mandate deposit of publications in OUR Archive, let Divisions or Departments take their own approaches to open access funding and policy, or even have the Government or funding agencies set policy for open access. Respondents' opinions were most evenly divided over the question of whether the University should promote open access as a positive choice for career advancement. This may reflect the ambivalence respondents have shown to aspects of open access publishing, such as quality concerns, and ethical concerns about paying to publish.



A table of the full data upon which the above graph is based is included in Appendix D.

Respondents' final comments

At the survey's end, 70% of respondents opted to receive a follow-up email with its results, which showed a very high level of interest in the survey outcomes.

Question	No thanks		Yes		Total
I would like to receive an email about the outcomes of this research	30%	116	70%	274	390
I would be happy to be approached to take part in possible follow-up focus groups	68%	264	32%	126	390

Respondents were also invited to add final comments. Over one-quarter (106) of respondents provided substantive comments, which were analysed for common threads. A 'thread' constituted 5 or more comments on the same theme; the major ones are described in the table below. Because a single comment often contained than one of these threads, the total number of comments presented below is more than the number of individual responses.

Topic covered	# of comments
Cost issues	25
Support for OA in principle / Importance of access without barriers	21
Need for more information or guidance through mass of information	13
Need central fund (or alternative sources) and/or policy	12
Performance Based Research Fund / Promotion / Impact factor	11
Survey needed	10
Quality concerns over editorial, peer review and 'paying to publish'	9
OA as the 'way of the future' / Advantages for researchers, such as speed of publication or ability to publish different kinds of work	7

Reflecting the results in the quantitative data, 25 comments mentioned issues relating to cost and the impact of this. Many of these reflected two of the strongest findings in the quantitative survey questions: a belief that open access is a good thing in principle but sometimes troublesome in practice.

> Open access publishing is a good thing and some of the journals are very good. But, the cost is an enormous barrier which we have no answers to at a Dept level. It's fine for staff with [research] accounts; not for others. (Health Sciences, Dunedin; 15-24 years)

> I think, with publicly funded research, there is a moral obligation to have the findings freely available, via Gold OA, to benefit service users, clinicians, researchers, policy makers etc. I also don't see why I should have to pay personally to have that happen. However, putting Gold OA costs into grants usually gets struck out. UOW does have a fund I can apply to in order to meet Gold OA costs (big tick!) and I have successfully applied to that fund to enable publication of a paper in preparation. As the audience for this paper is clinician researchers I think it is imperative

> this paper is freely available via Gold OA as many clinicians (the target audience) have very restricted access to publications. (Health Sciences, Wellington; 15-24 years)
>
> The cost of some OA journals is definitely a barrier and can be a determining factor when thinking about where to send a manuscript. This is particularly an issue for work published while still a student. Many of the best journals in my area are OA only and have fees up to $5500 per manuscript, but some funding bodies specifically exclude publishing fees from grants. (Health Sciences, Dunedin; fewer than 5 years)
>
> Open access seems like a great idea but we are currently in a transition time which makes funding very difficult. I would never choose a journal because it was open access, but if I had funding available I would make the paper open access (as most journals I publish to have the option). (Sciences; 5-14 years)

Some of those who commented on costs made points more nuanced than was possible in the quantitative questions:

> I think what the survey did not capture for me was the differences between OA journals. There are top ranked journals offering open access and dodgy OA, outlets. Individual resarchers [sic] should know the difference. It is their responsibility. The key for me is that I would like my articles in the best journals and open access, and free to all, but there is no money for this. While the university pays for access to these journals I doubt it will feel like paying again for me to have each article OA. (Other; 25 years or more)
>
> Open access or not, page charges for publishing are a crippling cost that does influence publication; equally and sometimes more so if coloured photographs and other graphics are required. This is the main barrier I face. (Health Sciences, Dunedin; 25 years or more)

While others tied their comments on cost to policy or strategic issues:

> I just want to reiterate that there are very few funding options for early career research-only staff on 'soft money' to publish in open access journals or to pay the additional fee to make the paper open-access. These and other limitations on OA publishing are not only disappointing when PBRF is so important, but also unethical on behalf of the university. (Health Sciences, Dunedin; 5-14 years)
>
> At present the University is paying twice - for OA and for Journal subscriptions. I used to think that OA was the way of the future, but I am now not convinced. Thus, I refuse to pay for OA while we are paying for journals; and in my area the top journals are not OA (at least not yet). If the University were to decide to pay for OA, we should simultaneously stop journal subscriptions, and only support OA. This would provide the money for OA. I would however recommend that Otago does not go down this pathway alone. (Health Sciences, Christchurch; 25 years or more)
>
> It seems cruel and perverse to have staff create the work and then have to pay to get things published. It is effectively shifting the the financial costs to individuals rather than organisations/employer. Also it will seriously skews what gets published. Good 'non-funded' work gets blocked unless a cake stall is held! Also, it creats [sic] perverse incentives within departments where an HoD 'could' decide to grant OA funding to some staff but not others (beleive [sic] you me, this sort of thing has already started). So, a University-wide policy is needed. (Health Sciences, Christchurch; 15-24 years)

> Most of the top universities support OA and is made free for the staff members. However, being an emerging researcher without having sufficient funding, it is hard to self fund for articles in OA journals. I request University to widely accept the application for funding with OA journals and funding should be immediately available if the study is of high quality clinical or research investigation. (Health Sciences, Dunedin; fewer than 5 years)

The next most common theme was support for open access in principle, with 21 comments. As indicated above, several people voiced this support as part of a cost/idealism dichotomy but others were unequivocal:

> If research is publicly funded, then the results should be accessable [sic] to the public without cost/delay/other barriers. (Health Sciences, Dunedin; 5-14 years)

> We research in areas of health equity and indigenous health. Open Access publishing is a way of reducing the inequity in access to research for marginalised populations. (Health Sciences, Wellington; 15-24 years)

> Public health research needs to be freely available if it is going to add to the evidence base. (Health Sciences, Dunedin; 25 years or more)

> I think a University policy to support and encourage open access publishing as a moral imperative in line with our strategic mission would be a powerful statement. (Health Sciences, Dunedin; 25 years or more)

And several of these sorts of comments also highlighted what they portrayed as problems with large for-profit publishing companies, in this sort of vein:

> All research that is publicly funded (however convoluted the funding route) should be available for the public to read -- unless there is a genuine public good reason for it not to happen. Preserving the profits of established publishing companies by obeying restrictive copyright rules is NOT a genuine public good reason. Freedom of information is part of a functioning democracy. (Health Sciences, Wellington; 5-14 years)

The next most common thread (13 comments) was that staff feel they need more information or guidance about open access, either because of a poor understanding on their part or because of an overwhelming amount of information on the topic – again reflecting the quantitative questions discussed previously.

> Great to see this issue being researched and discussed. It would be very helpful to have more explicit guidance on which OA journals are reputable, and which are basically just vanity press, to avoid individuals having to reinvent the wheel. The good ones have a real and growing place in academia. (Health Sciences, Wellington; 25 years or more)

> We are overwhelmed with information of all kinds and all seemingly important. If I was less busy I might be able to access it. (Health Sciences, Dunedin; 5-14 years)

Twelve comments suggested that central funding was needed and/or policy on open access. A further eleven respondents tied this into what they saw as related issues of incentives to publish for academics, including the Performance-Based Research Fund, promotion policies and impact factor. Some of these comments are included in those already quoted above for different

threads. Notably, as in the following examples, comments in this thread were mostly from staff in the Sciences and Humanities.

> University support of fees for high impact OA journals would be welcome. I have recently decided against submitting to Nature Comm due to the high OA fees. (Sciences, 15-24 years)

> In a competetive [sic] environment, its [sic] unfair that some divisions have access to funding for OA and others do not. (Sciences, 15-14 years)

> If one academic gets university funding at any level of any sort for OA, then all should get funding for OA. It should be restricted to quality publications (based on the usual measures). It should come out of PBRF funds and not any other university funds (i.e., not out of e.g., library, departmental, or divisional funds). (Humanities; 5-14 years)

> Given the fixation on PBRF and impact factor metrics, the university is stupid to not have a fund to pay for open access journals when many of the very best journals with the highest impact factors are open access. For example: [Journal A] (8.385), [Journal B] (3.558), [Journal C] (3.488), etc. Instead of being able to publish in these journals I've had to publish in conventional (though still respectable) journals with lower impact factors like [Journal X] (2.808) and [Journal Y] (2.010). (Sciences; 5-14 years)

> I would really like the Division of Science to have a twice-yearly application to fund open access publication charges. Unless you have a grant, there is no way to cover these expensive charges -- e.g., Frontiers open access $1900 USD, PlosOne $1495 USD, etc. Open access is good for PBRF and swiftness of publication. It seems crazy that we have no pool of funding at the University level to cover these costs. (Sciences; 5-14 years)

Ten comments suggested that a survey was needed and/or that respondents were interested in the results.

> I am pleased to see that the University is beginning to address the issues associated with Open Access. (Health Sciences, Christchurch; 25 years or more)

> Good on you for exploring this important issue. Not sure why there isn't much wider discussion around OA at Otago. (Humanities; fewer than 5 years)

And nine comments related to concerns about the quality of open access journals, including negative opinions expressed about 'paying to be published':

> I have been told by my HOD that publishing in OA has less status because you are paying to get published - I am not sure that this is true but it seems to be a prevalent idea. (Health Sciences, Dunedin; fewer than 5 years)

> My experience is that the rapid speed at which OA articles are published means that the quality of the reviewing is lowered; I have seen this happen more and more recently. OA journals are not the be-all and end-all; I prefer to publish in conventional journals that have an option for OA after acceptance. (Sciences; 5-14 years)

> The number of dubious OA publishers, publishing for a fee but with little or no peer review, has created a new set of problems for those of us who favour (in principle) OA publication. Staff and graduate students need more guidance about this. (Humanities; 15-24 years)

Finally, seven comments were made about open access as the 'way of the future,' including some that focused on the new opportunities possible with newer publishing models:

> OA is crucial for the next phase of academic growth and will ultimately affect the Universities visibility and ranking. The study is very apt and findings should be communicated to management to effect change. Thanks. (Health Sciences, Dunedin; 5-14 years)

> open access journals (in my limited experience with ?3 journals I think) appear to have more rapid turnaround time from submission-peer review-publication. Shorter time to publication has many advantages for researchers. (Health Sciences, Wellington; 15-24 years)

> In my field OA offers a wider range of specialist journals than the conventional print journals and are very much part of the publishing landscape now. (Health Sciences, Christchurch; 25 years or more).

Appendices

Appendix A: List of open access policies at Matariki Network universities

Member name	Policy name and link	Summary
Dartmouth College	Dartmouth Faculty Open Access Policy https://www.dartmouth.edu/~library/col/oa_policy_resolution/	Green OA policy for peer-reviewed author's version (the accepted manuscript) to be deposited in institutional repository.
Durham University	Durham University Open Access Policy http://dro.dur.ac.uk/du_oa_policy_summary.pdf	Mandatory deposit in institutional repository for all peer-reviewed journal articles and conference proceedings. Alignment with UK Research Excellence Framework OA requirements.
Queen's University	Queen's University Open Access Policy for Librarians and Archivists http://post.queensu.ca/~qula/open_access.html	Not a policy that governs academic staff but is one that governs the work of academic librarians. Academic staff are encouraged to practise Green OA.
University of Tübingen	Open Access Policy der Universität Tübingen (German) http://www.uni-tuebingen.de/einrichtungen/universitaetsbibliothek/forschen-publizieren/open-access-policy-der-universitaet-tuebingen.html	Green, with some support available for Gold OA.
University of Western Australia	UWA Research Repository http://www.governance.uwa.edu.au/procedures/policies/policies-and-procedures?method=document&id=UP10%2F4	Not an open access policy, rather a set of guidelines that govern use of the institutional repository.
Uppsala University	Uppsala University Mission and core values http://www.ub.uu.se/publish/about-open-access/	Uppsala mission and core values lists: "Research results will be made available in open access channels, wherever possible."

Appendix B: respondents by department

The table below presents details for Q3, where respondents from the University of Otago were asked to indicate their primary department.

Commerce / School of Business	**16**
Accountancy and Finance	3
Economics	1
Information Science	5
Management	1
Marketing	5
Tourism	1
Health Sciences (Christchurch)	**33**
Centre For Postgraduate Nursing Studies, Christchurch	3
General Practice, Christchurch	1
Medicine, Christchurch	5
Obstetrics and Gynaecology, Christchurch	1
Orthopaedic Surgery & Musculoskeletal Medicine, Christchurch	2
Paediatrics, Christchurch	2
Pathology, Christchurch	7
Population Health, Christchurch	4
Psychological Medicine, Christchurch	7
Radiology, Christchurch	1
Health Sciences (Dunedin)	**151**
Anatomy	22
Biochemistry	21
Bioethics	5
Dentistry	11
General Practice and Rural Health, Dunedin	7
Medicine, Dunedin	9
Microbiology and Immunology	5
Pathology, Dunedin	9
Pharmacology and Toxicology	6
Pharmacy	9
Physiology	7
Physiotherapy	5
Preventive and Social Medicine, Dunedin	19
Psychological Medicine, Dunedin	5
Surgical Sciences, Dunedin	3
Women's and Children's Health, Dunedin	8
Health Sciences (Wellington)	**38**
Medicine, Wellington	5
Occupational & Aviation Medicine, Wellington	1

Paediatrics and Child Health, Wellington	3
Pathology and Molecular Medicine, Wellington	1
Primary Health Care and General Practice, Wellington	9
Psychological Medicine, Wellington	3
Public Health, Wellington	9
Radiation Therapy, Wellington	3
Rehabilitation Teaching & Research Unit, Wellington	1
Surgery and Anaesthesia, Wellington	3
Humanities	**78**
Anthropology and Archaeology	7
Classics	3
Education	9
English and Linguistics	9
Geography	5
Higher Education Development Centre	2
History and Art History	4
Languages and Cultures	3
Law	1
Media, Film & Communication	7
Music	5
Peace and Conflict Studies	2
Philosophy	3
Politics	2
Sociology, Gender, Social Work	6
Te Tumu, School of Maori, Pacific & Indigenous Studies	4
Theatre Studies	2
Theology and Religion	4
Other	**10**
Other	10
Sciences	**112**
Applied Sciences	4
Botany	3
Centre for Science Communication	1
Chemistry	14
Computer Science	7
Food Science	7
Geology	6
Human Nutrition	12
Marine Science	7
Mathematics and Statistics	4
Physics	11
Psychology	15
School of Physical Education	8

Science Division Misc.	1
Surveying	2
Zoology	10
Total	**438**

Appendix C

Data table for Question 21: Beliefs about and attitudes towards open access.

Indicate how strongly you agree or disagree with the following statements	Strongly disagree		Disagree		Neither agree or disagree		Agree		Strongly agree		I don't know	Total	Mean
OA research articles are read more widely	2%	5	11%	35	28%	88	33%	103	27%	84	76	315	3.72
OA research articles are cited more often	5%	13	18%	50	42%	116	22%	61	14%	39	112	279	3.23
OA gives authors control over the dissemination and reuse of their work	2%	7	13%	41	39%	124	32%	102	15%	48	69	322	3.44
Research articles should be freely available to all	1%	3	3%	10	11%	43	32%	122	54%	207	6	385	4.35
Research data should be OA and available to all (privacy, ethical or other restrictions notwithstanding)	2%	9	14%	54	20%	75	33%	125	30%	113	15	376	3.74
OA is not important in terms of career advancement	8%	25	24%	79	35%	115	23%	74	10%	34	64	327	3.04
It's easier to get published in an OA journal	4%	14	17%	54	33%	103	32%	101	14%	44	75	316	3.34
I am not willing to pay just to make my article OA	4%	16	18%	67	22%	83	28%	104	28%	105	16	375	3.57
Obtaining funding to publish OA is a barrier that prevents adoption	1%	2	5%	18	10%	36	35%	125	49%	172	38	353	4.27
It is difficult to tell legitimate publishers apart from disreputable ones	6%	20	26%	95	13%	49	37%	135	18%	64	28	363	3.35

Appendix D

Data table for Question 22: Open access in the local context.

Indicate how strongly you agree or disagree with the following statements	Strongly disagree		Disagree		Neither agree or disagree		Agree		Strongly agree		I don't know	Total	Mean
The University should provide more information and guidance to researchers about OA	1%	2	2%	6	20%	77	48%	188	28%	110	7	390	4.04
The University should provide funding mechanisms for OA article processing charges	3%	11	4%	15	11%	43	34%	131	45%	176	14	390	4.19
The University should fund institutional memberships with major open access publishers to reduce OA article processing charges	2%	8	2%	7	9%	36	39%	151	44%	173	15	390	4.26
The University should promote OA as a positive choice for career advancement	4%	17	9%	35	26%	100	27%	105	27%	107	26	390	3.69
The University should provide more information to researchers about authors' rights and publishing agreements	1%	2	2%	9	19%	73	44%	172	32%	125	9	390	4.07
The University should assist researchers in creating OA journals	6%	23	15%	59	43%	167	16%	62	12%	48	31	390	3.15
The University should mandate that a version of all research publications be deposited in OUR Archive	9%	35	20%	78	26%	102	24%	92	14%	53	30	390	3.14
Divisions and/or Departments should decide their own approach to OA policy/funding	12%	45	19%	73	36%	141	22%	85	5%	21	25	390	2.9
The government/funding agencies should set policy for OA	9%	36	21%	82	25%	97	24%	94	13%	52	29	390	3.12

Notes

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[12] See p. 17 of *Performance-Based Research Fund User Manual, version 3, December 2014* for PBRF panels and associated subject areas.

[13] Ibid. The Medicine and Public Health field includes the biomedical sciences, clinical medicine, and public health. The Health field includes dentistry, nursing, other health studies such as rehabilitation therapies, pharmacy, and sport and exercise science.

[14] See, for example, the 2008 national survey by the Australian Government Department of Education, Employment, and Workplace Relations, *Academic Authorship, Publishing Agreements, and Open Access*; and the 2009-2011 *Study of Open Access Publishing (SOAP) Project Survey*, sponsored by the European Commission.

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[18] For an explanation of the Creative Commons licenses, see: http://creativecommons.org.nz/licences/licences-explained/

[19] This calculation uses 11 for the '11 or more' category.

[20] See the *RCUK (Research Councils UK) Policy on Open Access* at: http://www.rcuk.ac.uk/research/openaccess/policy/.

[21] See Director of the Office of Science and Technology Policy John P. Holden's *Memorandum for the Heads of Executive Departments and Agencies* at: https://www.whitehouse.gov/sites/default/files/microsites/ostp/ostp_public_access_memo_2013.pdf

[22] See the European Commission statement on *Open Access to Scientific Information* at: https://ec.europa.eu/digital-single-market/open-access-scientific-information.

[23] To learn which research organisations, funders, and institutions around the world have open access mandates and policies, see the Registry of Open Access Repository Mandates and Policies (ROARMAP).

[24] Exchange rates on the day the survey invitation was sent were: €1.00 = US$1.11 = NZ$1.64. Source: www.xe.com/currencytables/?from=EUR&date=2015-10-22

[25] See Morrison, H. et al. (2015). "Open Access Article Processing Charges: DOAJ Survey May 2014." *Publications*, 3, p. 1-16; doi: 10.3390/publications3010001.

[26] See Solomon, D. J. and Bjork, B. (2012). "A Study of Open Access Journals Using Article Processing Charges," *Journal of the American Society for Information Science and Technology*, 63(8), p. 1485-1495.

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[31] See the SPARC OA Citation Project, a meta-analysis of studies of citations and open access: http://sparceurope.org/oaca/ Of 70 studies analysed, 46 show a citation advantage, 17 no advantage, with the rest inconclusive.

[32] Publishers offering open access institutional membership schemes to reduce authors' article (and book) processing fees include BioMed Central, BMJ, Brill, Cambridge University Press, The Royal Society, Springer, Taylor & Francis, and Wiley. Other publishers, such as ACS, NRC (Canada), and RSC, offer discounts based on the journal subscription packages held by the authors' institutions. Other models include scholarly societies' offering discounts on APCs for their member authors. Oxford University Press offers loyalty discounts to authors publishing a second open access article in the same journal article within 12 months.